



**PROVIDING UTILITIES TO US AIR FORCE
INSTALLATIONS**

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This instruction implements AFPD 32-10, *Installations and Facilities*, and Title 10, United States Code (U.S.C.), Section 2481. Follow this instruction if you manage, supply, purchase, or sell utility services on an Air Force installation. See **Attachment 1** for a glossary of references, abbreviations, acronyms, and terms used in this instruction.

SUMMARY OF REVISIONS

- | This publication is being revised to include a Table of Contents and to correct paragraph 3.6.5.3..

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Chapter 1

RESPONSIBILITIES

1.1. The Civil Engineer, Headquarters US Air Force (HQ USAF/ILE). Develops policy, oversees execution, and advocates for resources for utility services.

1.2. Headquarters Air Force Civil Engineer Support Agency, Technical Support Directorate, Electrical Engineering Division (HQ AFCESA/CESE):

- Serves as the Air Force point of contact to manage utility rates and coordinates intervention activities with other Department of Defense (DoD) and Federal agencies.
- Administers an Air Force-wide utility rate expert services contract. Contracted utility rate expert services are available for rate intervention support, special studies, and negotiation support.
- Works with Secretary of the Air Force, Acquisition Operational Contracting Division (SAF/AQCO), and Air Force Legal Services Agency, Utility Litigation Team (AFLSA/ULT), to help major commands and bases hold down utility rates.

1.3. Major Command:

- Assists installations as necessary in managing, supplying, purchasing, or selling utility services.
- Reports proposed rate changes from regulated suppliers to HQ AFCESA/CESE with recommendations concerning rate intervention.

1.4. Installation:

- Acquires utilities at the lowest overall total cost to the Air Force, consistent with proper standards for reliability of service, mission requirements, efficiency of operations, and health and sanitation.
- Uses a team approach as necessary to ensure proper coordination between engineering, contracting, and legal. Do not create a team at installations in foreign countries or at any installation where another agency purchases the utilities.

1.5. Operational Contracting Officer:

- Negotiates all utility service contracts with assistance from engineering and legal. Serves as the installation's primary spokesperson with the supplier.
- Asks the Defense Contract Audit Agency to audit the books of utility suppliers not subject to a regulatory body when contracting needs help in determining the cost of service.
- Requests, if needed, utility contract guidance from MAJCOM/Contracting and SAF/AQCO.

1.6. Staff Judge Advocate. Makes sure that utility service contracts comply with Federal, state, and local laws, including ordinances, commission rulings, court decisions, and Comptroller General opinions.

1.7. Base Civil Engineer:

1.7.1. Assigns a focal point for coordinating engineering, operations, real property, financial management, contracting and legal activities required to manage, supply, purchase, or sell utility services.

1.7.2. Prepares and administers all utility sales contracts and agreements.

- 1.7.3. Uses load management technology and devices to economically manage loads, including shifting loads from the on-peak to the more economic off-peak periods. Involves senior base management and major users in making and implementing an innovative load management plan (AFPD 23-3, *Energy Management*), and in determining the potential for using interruptible rate schedules.
- 1.7.4. Estimates utility requirements and prepares utility service specifications.
- 1.7.5. Makes recommendations on the technical sufficiency and acceptability of proposed rates, connection charges, termination liability provisions, and technical provisions, and provides technical support to the Contracting Officer at all utility service negotiations.
- 1.7.6. Manages technical aspects of utility service contracts and assists the Contracting Officer with administration by providing technical input and recommendations. Certifies that services have been received. Keeps a utility management brochure for each supplier providing purchased utilities to the installation. Reviews all utility service contracts annually.
- 1.7.7. Budgets for purchased utility services and manages funds.
- 1.7.8. Informs the major command of proposed rate changes by regulated suppliers.
- 1.7.9. Explores private sector development possibilities for meeting utility requirements.

Chapter 2

MANAGING AND SUPPLYING UTILITIES

2.1. Utility Management Brochures. Installations keep a utility management brochure for each supplier that provides purchased utilities to the installation. Use the brochure as a tool for managing purchased utilities and as a source of data needed to analyze and evaluate proposed rate changes. See attachment 2 for a list of brochure contents. **NOTE:** Do not keep a brochure at installations in foreign countries or at any installation where another agency purchases the utilities.

2.2. Determining Utility Service Requirements:

2.2.1. Use maximum cross-servicing of all utility systems owned or operated by other government agencies (Title 31, United States Code, Section 1535, and Federal Acquisition Regulation [FAR], Part 17).

2.2.2. Explore privatization initiatives before requesting military construction appropriations when constructing or expanding an Air Force-owned plant (Title 10, United States Code, Sections 2394, 2809, 2812, and 2857).

2.2.3. Do not construct or expand Air Force-owned facilities when utilities are available economically from commercial sources and the reliability of the purchased utility service is consistent with mission requirements.

2.2.3.1. To increase the reliability of purchased utilities, obtain agreements with the suppliers for priority restoration of service.

2.2.3.2. To obtain purchased utility services:

- Validate that a requirement exists.
- Survey the requirement site to find out if special problems or conditions exist.
- Evaluate alternative ways of obtaining utility service for large loads and decide which is the most economical and feasible.
- Prepare utility service contract specifications, making sure that consumption and demand estimates are realistic. Attachments 3 through 7 contain utility service contract specifications formats for potable water, sewage, steam, electricity, and natural gas.
- Check all applicable published rate schedules to decide the most favorable rate schedule. If no published rate schedule is compatible with government demand and consumption requirements, assist contracting in negotiating a favorable special rate.

2.3. Estimating Electric Service. To acquire the best service at the lowest cost, estimate the present and future requirements accurately and realistically. See AFJMAN 32-1080, *Electrical Power Supply and Distribution*.

2.3.1. Overestimating requirements results in excessive connection charges and unreasonable minimum charges. When actual demand is below the contract minimum demand, the installation pays for more service than it actually uses.

2.3.2. Underestimating requirements results in inadequate plant and system capacity, additional connection charges, and a higher unit cost for service based on a low consumption rate schedule.

2.4. Obtaining Electric Service. Use the following methods, in the order given, to obtain electric service.

2.4.1. For the main base, use in order of preference:

- Supplier's (public or private utility company) transmission voltage to supplier-owned substation, with distribution through a supplier-owned distribution system.
- Supplier's transmission voltage to a government-owned substation, with the delivery point on the high side of the substation transformer (AFI 32-1063, Electric Power Systems) to a government-owned distribution system.
- Supplier's transmission voltage to a supplier-owned substation (facilities use charge to government), with the delivery point on the low side of the substation transformer to a government-owned distribution system.
- Supplier's transmission voltage directly to a government-owned distribution system when its primary voltage is the same as the supplier's transmission voltage.
- Supplier's secondary voltage directly to a building load for small, localized loads.
- Government-owned central plant to a government-owned substation with distribution through a government-owned distribution system.

2.4.2. For family housing and areas relatively remote from main base systems, use:

- Feeder from main base substation or distribution system.
- Separate bulk metering with conjunctive billing from supplier.
- Separate bulk metering and separate billing from supplier.
- Multiple meters with separate billing from supplier.

2.5. Obtaining Gas Service. Use natural gas when it is the most economical fuel available. Use:

- Firm natural gas service for health and human needs and for other loads when no alternative fuel is available for standby.
- Interruptible natural gas service for curtailable loads or for fixed loads when propane-air or another backup fuel is available.

2.5.1. For the main base, use in order of preference:

- Supplier's (public or private utility company) gas with distribution through a supplier-owned distribution system.
- Competitively procured gas with distribution through a government-owned distribution system.

NOTES:

Defense Logistics Agency, Defense Fuels Supply Center, Alternative Fuels (DLA/DFSC-A) issues competitive solicitations and awards contracts to provide DoD installations with direct-supply natural gas from wellhead producers. Defense Logistics Agency arranges transportation via interstate pipelines to local distribution companies. All firm and interruptible requirements must be evaluated by DLA for possible inclusion in these contracts.

- Supplier's gas with distribution through a government-owned distribution system.

2.5.2. For family housing and areas relatively remote from main base systems, use:

- Feeder from main base distribution system.
- Separate bulk metering with conjunctive billing from supplier.
- Separate bulk metering and separate billing from supplier.
- Multiple meters with separate billing from supplier.

2.6. Obtaining Water and Sewage Service: Use the following methods, in the order given, to obtain water and sewage service.

2.6.1. For water for the main base, use in order of preference:

- Supplier's (public or private utility company) water with distribution through a supplier-owned distribution system.
- Supplier's water with distribution through a government-owned distribution system.
- Government-owned water supply facilities (AFI 32-1067, *Water Systems*) through a government-owned distribution system.

2.6.2. For water for family housing and areas relatively remote from main base systems, use:

- Feeder from main base distribution system.
- Separate bulk metering with conjunctive billing from supplier.
- Separate bulk metering and separate billing from supplier.
- Multiple meters with separate billing from supplier.

2.6.3. For sewage service for the main base, use in order of preference:

- Supplier's (public or private utility company) treatment facilities with collection through a supplier-owned collection system.
- Supplier's treatment facilities with collection through a government-owned collection system.
- Government-owned treatment facilities (AFI 32-1067) through a government-owned collection system.

2.6.4. For sewage for family housing and areas relatively remote from main base systems, use:

- Collector to main base collection system.
- Separate bulk metering with conjunctive billing from supplier.
- Separate bulk metering and separate billing from supplier.
- Multiple meters with separate billing from supplier.

2.6.5. Municipal or regional water supply facilities are generally the best method for obtaining water service. When municipal or regional water supply facilities don't satisfy Air Force requirements, consider expanding Air Force-owned water supply facilities (AFI 32-1067). Support such expansion with a detailed engineering analysis, using the cost principles outlined in AFI 65-501, *Economic Analysis*.

2.6.6. Municipal or regional sewage treatment facilities are the best method for obtaining sewage service when:

- The cost of the sewage service is reasonable.
- The cost of the required connecting facilities is reasonable.

- The sewage treatment method complies with Federal, state, and local regulations on pollution abatement.

NOTE:

Environmental Protection Agency Program Requirements Memorandum 75-35 requires DoD to pay a prorata share of the total construction costs when Environmental Protection Agency grants funds to build or expand municipal or regional sewage treatment facilities (Comptroller General Decisions B-194912 and B-195507, October 4, 1979).

2.6.7. When municipal or regional sewage treatment facilities don't satisfy Air Force requirements, consider:

- Expanding Air Force-owned sewage treatment facilities. Support such expansion with a detailed engineering analysis, using the cost principles outlined in AFI 65-501.
- Using private sector development. See Title 10 U.S.C., Sections 2809, 2812, 2857, and 2394.

2.6.8. In deciding which method to use:

- Compare the use of available municipal or regional sewage treatment facilities against use of Air Force-owned or private sector development sewage treatment facilities.
- Consider the Environmental Protection Agency's recommendations.

2.7. Types of Contracts:

2.7.1. Support Agreements:

2.7.1.1. When acquiring utilities from another Air Force organization or DoD agency, use a written support agreement to record the type and conditions of service (DoD Instruction 4000.19, *Interservice and Intragovernmental Support*, August 9, 1995).

2.7.1.2. When acquiring utilities from another Federal agency, use a written interagency support agreement to record the type and conditions of service (FAR, Part 17).

2.7.2. General Services Administration Area-Wide Contracts. (See FAR, Part 41.) Any Federal Government activity located in the supplier's service area may use the General Services Administration area-wide contract. The General Services Administration area-wide contract has a contract number, a signature page, and the required FAR clauses. The installation:

- Selects the proper published rate or negotiates a special rate.
- Negotiates and adds any required special provisions.
- Adds the installation's utility service specifications to the area-wide contract.
- Executes an appropriate authorization to the area-wide contract.
- Pays the bills.

2.7.3. Separate Contracts. See FAR, Part 41.004-5, and Defense FAR Supplement (DFARS), Part 241.

2.7.4. Proposed Utility Contracts. Review proposed utility service contracts, agreements, and modifications for technical sufficiency and rate acceptability and send written comments and recommendations to contracting.

2.8. Connection Charge or Termination Liability. Make every reasonable attempt to obtain utility service contracts without a FAR, Part 41, termination liability or connection charge. When the supplier builds electric generating capacity or transmission lines specifically to meet the installation's requirements, the termination liability amount or the connection charge is substantial. If possible, try to negotiate a termination liability before offering a connection charge:

- You pay the connection charge when you enter the contract.
- You pay the termination liability when you terminate the contract before the date specified in the termination liability provision.
- Record commitment and obligation of funds for termination charges when actual termination takes place (Title 31 U.S.C., Section 1501; FAR, Part 17.103-1(f); and DoD 7000.14-R, *DoD Financial Management Regulation*, volume 3, *Budget Execution--Availability and Use of Budgetary Resources*).

2.8.1. Pay special attention to the minimum charge provision when using a definite term utility service contract or any utility service contract with a termination liability. "Minimum monthly charge" means any minimum charges of the supplier's rate schedule that become payable if the government reduces its usage below the minimum or terminates the service. These charges occur in:

- All utility service contracts with a termination liability provision.
- Most definite term utility service contracts.

2.8.2. Whenever possible, the Contracting Officer negotiates a refundable connection charge, specifying an amount or percentage the supplier subtracts from the monthly service bill until the total connection charge is refunded. **NOTE:** The connection charge is never more than the construction cost of installing the required facilities less net salvage value. When the connection charge consists of labor cost only (no material costs), do not subtract the net salvage value.

2.8.3. Do not base a connection charge or termination liability on the utility supplier's entire construction costs. The supplier recovers some of the construction costs in the rate schedules. In arriving at fair and reasonable construction costs, consider the:

- Permanency of load, annual load factor, and potential growth.
- Proposed construction cost applicable to Air Force and to other customers.
- Utility supplier's line extension policy and the amount of expansion cost included in rate schedules.
- Special considerations that the utility supplier accords to other large industrial customers.
- Added tax cost to the utility supplier because of the contribution in aid of construction (Title 26, United States Code, Section 118).

2.9. Ownership of On-Base Utility Lines. The government owns, operates, and maintains most on-base utility distribution systems.

- For new or replacement systems, where state and local laws permit public or private utility companies to own, operate, and maintain these systems, the Air Force may evaluate such public or private ownership of on-base utility distribution systems and determine if it is in the best interests of the Air Force. To obtain approval for public or private ownership, the installation commander must prepare a comprehensive assessment showing the feasibility and benefits and submit to AF/

ILEI through MAJCOM/CE. HQ AFCESA/CESE will assist in preparing these assessments; MAJCOMs/bases will contact HQ AFCESA/CESE prior to initiating studies.

- When it is in the best interests of the Air Force to acquire or upgrade Government-owned, on-base utility distribution systems with military construction, minor construction, or emergency construction funds, use a competitively awarded construction contract (FAR Part 36, and DFARS, Part 214.004-2[a][iv]). NOTE: Do not use the utility service contract's connection charge provision for the installation of Government-owned on-base utility distribution systems.

2.9.1. Limit the supplier's ownership of on-base utility distribution systems to that part of the system needed to connect the supplier's off-base service facilities to the government's on-base distribution system at the delivery point, which is normally near the base boundary. Have these facilities installed by adding the connection provisions in FAR, Part 41, to the utility service contract using operation and maintenance funds. See AFI 32-9003 for policy concerning easements.

2.9.2. To contribute to the cost of expanding the utility supplier's production facilities or its general "backbone" distribution system, add the connection provisions in FAR, Part 41 to the utility service contract, and use military construction or minor construction or emergency construction funds (Comptroller Decision B-147843, February 5, 1962).

2.9.3. ANG and AFRES are to follow the policy on ownership and operation of ANG and AFRES on-base utility distribution systems as set forth in SAF/MII memorandums.

2.10. Metering:

2.10.1. Use preferably only one delivery point and one set of master meters to measure purchased utility service to an installation. If, for energy security or other purposes, you have more than one delivery point, it is cheaper under most rate schedules (except inverted rates) to combine meter readings for billing purposes (conjunctive billing). If combining meter readings for billing purposes saves money, the Contracting Officer negotiates with the utility supplier to arrange for conjunctive billing.

2.10.2. When the supplier furnishes electric service at:

- The high-voltage side of the substation transformer, the Contracting Officer negotiates a primary electric discount service or metering discount.
- Secondary voltage, bills at secondary rates, and meters at primary voltage, the Contracting Officer negotiates a fair discount to the government for transformer losses.
- Primary voltage, bills at secondary rates, and meters at primary voltage, the Contracting Officer negotiates a fair discount for both transformer losses and government ownership of transformers.
- Primary voltage, bills at primary rates, and meters at secondary voltage, the Contracting Officer specifies in the utility service contract the percentage or method used to compensate for transformer losses.

2.10.3. Make sure the Operations Flight or designated using agency representative at sites located off the main base reads meters at the same time as the supplier.

2.10.4. Keep copies of meter readings and billings for the last 24 months and annually check the data to determine whether actual consumption is nearing the utility infrastructure capacity. If actual consumption is nearing capacity, analyze the infrastructure capacity. When estimating future utility

infrastructure requirements, include information from the base comprehensive plan and facility project books.

2.11. Meter Testing and Refunds. Use contract provisions for meter testing and refunds that comply with the rules and regulations of the state or local utility regulatory body having jurisdiction. The base utility engineer keeps a copy of the latest meter test for each meter and gives contracting the original copy of the meter test for the official contract file.

2.12. Invoice Review and Validation. Promptly check, validate, and process invoices for payment to avoid late payment charges or loss of any prompt payment discounts.

2.12.1. Make sure billing elements and rates comply with the latest approved contract rates, all charges are correct and contain applicable discounts, and demand charges for periods immediately following extended power failures do not unfairly penalize the Air Force. Validate each invoice by adding: "The services covered by this invoice have been received and the amount is proper for payment."

2.12.2. Analyze invoices to determine whether:

- Power factor corrective measures need to be taken.
- Demand needs to be rescheduled to off-peak periods.
- Demand is increasing.
- Demand controls need to be installed.
- Load factors are changing.
- Utility conservation measures regarding demand and commodity use are not effective.
- Budgets need to be modified.
- Contract demand needs to be increased.
- Money can be saved by combining meter readings on certain loads that are now separately metered.
- Trends in demand and commodity use indicate that another rate schedule would be more economical.

2.13. Rate Changes. Requests for rate changes are processed differently for the Department of Energy's Power Marketing Administrations, for utility suppliers not subject to a regulatory body, and for suppliers subject to a regulatory body.

2.13.1. Power Marketing Administrations. Power Marketing Administrations request rate changes through a public participation process. They publish proposed rate changes in the Federal Register for public comments, and then hold public meetings to receive and discuss all oral and written comments. After considering all comments, they decide, approve, and publish the new rate.

2.13.2. Utility Suppliers Not Subject to a Regulatory Body. Use the FAR 52.241-7 clause "Change in Rates or Terms and Conditions of Service for Unregulated Suppliers" in utility service contracts. This clause allows either party to request a change in rates or terms and conditions of service, with both parties agreeing to enter into good faith negotiations concerning such changes. When the utility service contract provides for rate negotiation, the installation:

- Does not recognize rate changes for any amount until the parties agree to a mutually satisfactory rate and a date for the new rate to take effect, then modifies the utility service contract to add the new rate.
- Makes payment at the old rate until the Contracting Officer modifies the utility service contract to add the new rate. During this period, ensures the financial manager commits enough funds to cover the possibility of retroactive payment based on the utility supplier's initially proposed rate increase (DoD 7000.14-R, volume 3).

2.13.3. Utility Suppliers Subject to a Regulatory Body. Use the FAR 52.241.6 clause "Change in Rates or Terms and Conditions of Service for Regulated Suppliers" in utility service contracts. This clause requires the Air Force to pay for utility service at the regulated rate. Promptly process a regulated supplier's request for change in rates.

2.13.3.1. The BCE informs legal, contracting, and the major command within 24 hours, giving all known details.

2.13.3.2. For installations located outside the United States, the major command requests HQ AFCESA/CESE assistance, if needed.

2.13.3.3. For installations in the United States, the major command informs HQ AFCESA/CESE within 24 hours if the potential annual increase to an installation is:

- More than \$300,000 a year for electric or gas service.
- More than \$200,000 a year for water or sewage service.
- Unreasonable, unjustified, or discriminatory.

NOTE:

The major command need not inform HQ AFCESA/CESE of fuel adjustment or purchase gas adjustment unless unusual circumstances warrant intervention.

2.13.3.4. The base legal office informs AFLSA/ULT of the request.

2.13.3.5. Within 1 week of the date that the major command informs HQ AFCESA/CESE of a proposed rate increase, the BCE provides to the major command (with information copies to legal, contracting, and HQ AFCESA/CESE):

- A list of all DoD activities taking service from the utility company.
- The date the supplier filed the request for a change in rates with the regulatory body, the assigned docket number, the amount and the percent requested for total company revenue, and the amount and the percent of potential annual impact on the installation.
- A copy of the supplier's request for a change in rates (obtain from either the supplier or the regulatory body).
- The date, amount, and percent in total revenue of the supplier's last approved rate increase.
- A copy of the present and the proposed rate schedule.
- A comparison of the installation's costs under the present rate schedule versus the proposed rate schedule. (Calculate hypothetical monthly bills for each rate schedule, using 12-month historical and 12-month projected billings for the installation.)

- A copy of other rate schedules applicable to the installation that are more economical than the proposed rate schedule, along with a month-by-month comparison. If you find no other rate schedule that is more economical, make a statement to that effect.
- A list of other Federal agencies and large industrial or commercial consumers taking service under the same or similar rate schedules.
- A recommendation as to whether the proposed rate increase is unjustified, unreasonable, or discriminatory to the Air Force. Specify whether you recommend intervening or not intervening, and explain why.

2.13.3.6. The major command promptly informs HQ AFCESA/CESE of its recommendation to intervene or not intervene, and provides funds for necessary contract utility rate intervention support and technical expertise that is not available in-house.

2.13.3.7. HQ AFCESA/CESE evaluates data received; coordinates with all concerned major commands, branches of the Armed Forces, and other Federal executive agencies; and decides whether intervention before a regulatory body is appropriate.

2.13.3.8. If the decision is made to intervene, the Federal executive agency constituting the largest energy user affected by the requested rate change will request a Delegation of Authority to Intervene from General Services Administration. Where the Air Force is the largest energy user, AFLSA/ULT will seek the delegation (AFI 51-301, *Civil Litigation*). If the Air Force receives the delegation, AFLSA/ULT intervenes on behalf of all Federal executive agencies. Normally, AFLSA/ULT drafts and has the base legal office file the Notice of Intent to Intervene. The AFLSA/ULT attorney is the Federal executive agency's spokesperson before the regulatory body.

2.13.3.9. When the regulatory body approves and puts a new rate into effect, notify the financial manager of the dollar impact and effective date.

2.14. Rate Schedules. Some utility suppliers offer several rate schedules, applicable under the same conditions of service. Review all rate schedules applicable to the installation to determine which rate schedule results in the lowest cost.

2.14.1. Energy and Demand Charges. Some utility suppliers offer a choice of rates to large customers, with the rates differing primarily in the relative value of energy and demand: one rate schedule includes high-energy charges and low-demand charges; another includes low-energy charges and high-demand charges. To determine which option to choose, analyze the average monthly load factor. Calculate hypothetical monthly bills for each rate schedule, using 12-month historical and 12-month projected billing determinants.

2.14.2. Time-of-Day Rates. Determine whether to take service on a time-of-day rate. Some utility suppliers require large consumers to take such service, but most offer such services as an alternative to other rates. A few suppliers offer very low time-of-day rates called real time pricing rates, with a daily selection of delivery times.

2.14.2.1. Time-of-day rate schedules identify two or three time periods: on-peak, off-peak, and perhaps a partial (or shoulder) peak period. The rates for energy and demand used during the peak period are higher than the rates for energy and demand during the off-peak period. The start, end, and duration of the peak period differ greatly among suppliers. When the installation shifts a portion of usage from the on-peak period to the off-peak period, time-of-day rates reduce utility bills.

2.14.2.2. Calculate the potential savings under a time-of-day rate schedule, using 12-month historical and 12-month projected billings for the installation.

2.14.3. Interruptible Rates. Some utility suppliers offer interruptible service at a substantial savings over firm (noninterruptible) service. Interruptible service permits the supplier to temporarily discontinue service during peak demand hours. The supplier gives advance notice, ranging from a few minutes to several hours.

2.14.4. Dual Fuel Rates. Most gas utility suppliers, in an effort to retain large gas customers, offer attractive rates to customers capable of using alternative fuels. If a dual-fuel rate is available, document the installation's ability to use dual fuels and work through contracting to implement the more favorable rate.

2.14.5. Demand Ratchets. Some rate schedules contain a demand ratchet provision, which allows suppliers to bill installations for the larger amount of either actual demand in the billing month or some percentage (sometimes as high as 100 percent) of the highest previous level of monthly demand over a specified number of months (usually the previous 11 months).

2.14.5.1. If your rate schedule contains a demand ratchet and the base utility engineer expects 1 month of abnormally high demand (caused by a construction project, equipment testing, or other factors), ask the Contracting Officer to negotiate with the utility supplier to avoid high bills for the next 11 months.

2.14.5.2. If your rate schedule contains a demand ratchet and the Base Civil Engineer expects the installation's load to decline in the future, ask the Contracting Officer to negotiate with the utility supplier to delete the demand ratchet from the rate schedule.

2.14.6. Standby Rates. Standby rates require the utility supplier to stand ready to serve the customer's load when the customer's power-generating facilities don't operate. Frequently, however, standby rates are high enough to cancel out any savings gained through cogeneration or self-generation.

2.14.7. Franchise Fee. Most utility suppliers obtain franchises from incorporated cities and towns within their service territory and pay a fee based on the dollar amount of each customer's bill for the use of the municipality's alleys, streets, and rights-of-way where distribution lines are located. Sometimes the supplier lists the franchise fee separately on the customer's bill. DoD installations are not exempt from the franchise fee.

2.15. Annual Review. Each year, or any time a contract is modified, review all utility service agreements and those utilities acquired without a written contract. Document this review using AF Forms 3550, 3551, and 3552, Annual Utility Contract Review for Electric Service, for Gas Service, and for Water and Sewage Service, respectively. The purpose of the annual review is to ensure that you are acquiring utilities at the most favorable rate available and are holding costs to a minimum while meeting mission requirements.

2.15.1. Compare cost trends to historical data and analyze any unusual or unexpected change.

2.15.2. Determine whether current utility service requirements, including quality and quantity of service, are within the estimated demand, consumption, and other contract provisions. Do not reduce estimated maximum demand and consumption in existing contracts to coincide with current actual

reduced demand and consumption unless such reduction results in a benefit to the government. Such reductions result in the loss of demand or consumption rights in connecting facilities.

2.15.3. Review the supplier's applicable rates for the installation's current requirements (actual usage, conditions, and characteristics of service for the most recent 12 months). Make sure that the installation buys the current requirement under the most advantageous rate schedule.

2.15.4. Make sure that metering and billing procedures are the most advantageous.

2.15.5. Give contracting a copy of the annual review with recommended contract changes. When the annual review indicates that actual consumption or demand exceeds contract quantities, prepare a new service specification (attachments 3 through 7) for inclusion in the contract.

2.15.6. Keep a copy of the annual review and document corrective actions for each discrepancy found during the annual review.

2.15.7. Review potential for private sector development for each utility system.

Chapter 3

SELLING UTILITIES AND RELATED SERVICES

3.1. Utility Sales Agreements. Title 10, United States Code, Section 2481, Chapter 147 authorizes the Secretary of the Air Force or his or her designee to sell utilities and related services to purchasers within or in the immediate vicinity of an Air Force installation. Proceeds of sales are credited to the appropriation currently available for the supply of that utility or related service. All utility sales agreements must be in writing and signed by the purchaser, the Base Civil Engineer, and the installation commander or his or her designee.

- Use AF Form 3553, Utility Sales Agreement for Non-Federal Organizations, to sell to non-Federal organizations. Use AF Form 3554, Utility Sales Agreement for DoD Agencies and Non-DoD Federal Agencies, to sell to DoD agencies and non-DoD Federal agencies.
- Use the AF Form 3555, Utility Sales Rates Exhibit __, (Exhibit B in sales agreements with non-Federal organizations, and Exhibit A in sales agreements with DoD agencies and non-DoD Federal agencies) to inform purchasers of the current utility sales rates.
- Keep the original utility sales agreement and send a copy to the purchaser, Accounting and Finance, and Real Property Management for activities operating under support agreements.
- Make sure the purchaser complies with conservation procedures in effect throughout the installation.

Inspect the purchaser's modifications and additions to utility facilities.

3.1.1. The MAJCOM Civil Engineer approves the AF Form 3553 for all off-installation sales.

3.1.2. For a purchaser such as Morale, Welfare, and Recreation (MWR) with activities in several facilities, use only one AF Form 3554.

- If more space is needed in paragraph 5 of AF Form 3554, add "See memorandum attached hereto which lists each activity, facility, and address to be served."
- Use a separate AF Form 3555 for each activity listed in paragraph 5 of AF Form 3554.
- Use a memorandum signed by the BCE to add, delete or change addresses for activities listed in paragraph 5 of AF Form 3554.

3.1.3. Keep the rewriting of utility sales agreements to a minimum. Utility sales agreements are in effect until terminated by either party by providing thirty day advance written notification to the other party. Make changes in rates and estimated annual consumption to all utility sales agreements by replacing the attached AF Form(s) 3555 and providing the purchaser with a copy of the updated AF Form 3555. It is not necessary to supersede, rewrite, or issue a new AF Form 3553 or AF Form 3554 to make minor changes or additions. Use a memorandum signed by the BCE to make minor changes or additions to existing utility sales agreements.

3.2. Restrictions. The installation commander may sell utilities and related services to a non-Federal purchaser on or in the immediate vicinity of an Air Force installation if:

- The sale serves the interest of national defense or the public interest.

- The service is not available from local private or public suppliers (the person responsible for utilities management makes this determination annually; if there is a local source, the Base Civil Engineer discontinues service as soon as possible).
- The sale does not disrupt present or planned service to the Air Force.
- Any minor expansion or extension of Air Force's utility distribution systems or facilities needed to make the sale does not hinder the construction of similar public or private facilities.
- The service is sold to the purchaser for his or her consumption, not for resale.

3.3. Wheeling Charge. The installation commander may allow utility suppliers to use government-owned, on-base distribution systems to transport utilities to on-base non-Federal organizations with extremely large utility consumption if adequate capacity is available and the Contracting Officer adds to the utility service contract a wheeling charge provision (see figure 3.1).

- Compute the wheeling charge to the utility supplier according to paragraph 3.8.4, without including the basic cost as defined in paragraph 3.8.4.1.
- Recalculate the wheeling charge annually, using prior fiscal year cost data and give the utility supplier the updated charge (effective on 1 December).

Figure 3.1. Sample Wheeling Charge Provision.

In consideration for the use of government-owned, on-base distribution systems to transport utilities to (show the name and address of the non-Federal organizations), the utility supplier agrees to include on the monthly invoice to the installation a deduction for the amount of utilities consumed by the non-Federal organizations and a deduction to cover the wheeling charge of (show the amount) per (show the unit of measurement [kWh, Mcf, Btu or kgal]). Annually, the base utility engineer recalculates the wheeling charge according to AFI 32-1061, using prior fiscal year cost data, and gives the utility supplier the updated wheeling charge, which takes effect on 1 December. The government may revoke this provision with a 30-day written notice to the utility supplier.

NOTE:

Most utility suppliers will not agree to wheel due to the expense of installing and reading meters, obtaining security to get on base, and hand processing the installation's monthly utility bills. Ask suppliers to wheel to on-base non-Federal organizations with extremely large utility consumption such as a privately-owned industrial plant or large privately-owned hotel. Do not ask suppliers to wheel to small users such as banks and credit unions. Administering a wheeling charge provision increases the Base Civil Engineer and Operational Contracting Offices' administrative cost and effort. The Base Utility Engineer reads on-base non-Federal organizations' meters monthly at the same time as the supplier, verifies proper wheeling amounts are deducted on the monthly invoice, and annually recalculates the wheeling charge. Not later than 1 December each year, the Contracting Officer modifies the utility service contract to update the wheeling charge.

3.4. Supplied Without Reimbursement.

3.4.1. Supply utilities without reimbursement to appropriated funds to the following:

- Buildings, structures, and facilities located on Air Force-owned or leased real property and operated from Air Force appropriated funds. This includes buildings, structures, and facilities occupied by the Air Force Reserve (AFI 65-601V1, figure 7.1, item 11, and table 15.2).
- Facilities on an Air Force installation occupied by Federal Aviation Administration personnel providing air traffic control primarily for Air Force aircraft.

3.4.2. Supply utilities without reimbursement to appropriated funds when the DoD or Air Force Directive, Regulation, or Instruction which permits the activity to operate on the installation also specifically authorizes that activity to receive utilities without reimbursement. Examples are:

3.4.2.1. Occupants of public quarters, family housing, transient billeting facilities, and unaccompanied personnel housing facilities when use of the quarters is without charge or when the rental charge is a percentage of the basic allowance for quarters (AFI 32-6001, *Family Housing Management*).

3.4.2.2. MWR category A and B activities regardless of location, and category C activities located outside the continental United States or in a remote and isolated location approved by the Congress and listed in AFI 65-106, *Appropriated Fund Support of Morale, Welfare, and Recreation and Nonappropriated Fund Instrumentalities*.

3.4.2.3. Credit unions occupying free space in a government-owned building (AFI 65-702, *Credit Unions on Air Force Installations*).

3.4.2.4. Non-self-sustaining banks (AFI 65-701, *Banking Services on Air Force Bases*).

3.4.2.5. Red Cross activities (AFI 36-3105, *Red Cross Activities Within the Air Force*).

3.4.2.6. Air Force Aid Society (AFI 36-3109, *Air Force Aid Society*).

3.4.2.7. United Services Organizations (USO) incorporated on-base activities (AFI 34-123, *Private Organizations Program*).

3.4.2.8. Colleges and universities operating on Air Force installations (AFI 36-2306, *The Education Service Program*; and SAF/GCA Memorandum, "Reimbursement of Utilities Provided to Colleges and Universities Operating on Air Force Installations," August 16, 1995).

3.4.2.9. Labor organizations subject to Executive Order 11491 and authorized by the installation commander in writing to use on-base facilities without cost (AFI 34-123 and AFI 36-701, *Labor-Management Relations*).

3.4.2.10. Other types 1, 2, and 3 private organizations, listed in AFI 34-123, when use of an on-base facility is occasional and only a minor part of the facility's use (AFI 65-601V1). See AFI 35-204, *Art Program*, to determine when museums are authorized to receive utilities without reimbursement.

3.4.2.11. Contractors (individual, firm, or corporation performing work on an installation) when the O&M contract authorizes them to receive utilities without reimbursement.

3.4.2.12. Construction or demolition contractors (performing work on an installation for the Air Force or for a defense construction agency) when Federal Acquisition Regulation (FAR) 36-514 and the fixed-price construction or demolition contract authorizes them to receive utilities without reimbursement.

- If the project involves a facility authorized to receive utilities paid for from appropriated funds, supply the utilities used by the contractor during construction or demolition without reimbursement, using appropriated funds.
- If the project involves a facility not authorized to receive utilities paid for from appropriated funds, supply the utilities used by the contractor during construction or demolition without reimbursement, using non-appropriated funds.

3.4.2.13. Thrift shops operated by Wives/Spouses Clubs on Air Force installations (DoDI 7230.7 with SAF 9 Apr 96 letter).

3.5. Supplied With Reimbursement. Supply utilities with reimbursement to appropriated funds when the DoD or Air Force Directive, Regulation, or Instruction which permits the activity to operate on the installation also requires that activity to reimburse appropriated funds for utilities. Consolidate billing data by purchaser (MWR is a single purchaser with many facilities and activities). Waive billing when the total charge to a single purchaser for all utility and related services supplied to all the purchaser's facilities or activities is less than the amount authorized by DoD 7000.14-R, volume 4, *Accounting Policy and Procedures*, and volume 10, *Contract Payment Policy and Procedures*.

3.5.1. DoD Agencies:

3.5.1.1. Category C MWR Revenue-Generating Activities and Other Related Activities.

This includes Category C MWR revenue-generating activities listed in AFI 65-106, Army and Air Force Exchange Service (AAFES) activities such as laundry and dry cleaning, package stores, fast-food restaurants, and their other concessionaires, and military clothing sales stores. Compute the sales rates according to paragraph 3.8.1 and provide the purchaser with AF Form 3554.

- For Category C MWR activities not in remote and isolated locations listed in AFI 65-106, supply all utilities, except for sewage and refuse collection and disposal services, with reimbursement. Supply refuse collection and disposal service to all Category C MWR activities, except AAFES, without reimbursement. Supply refuse collection and disposal service to AAFES activities, such as laundry and dry cleaning, fast food restaurants, and their other concessionaires, with reimbursement. Also supply all fuels, including gas, oil, coal, and other fuels used for heating real property, with reimbursement. Also supply all fuels used to generate revenue from activities such as cooking, laundry and dry cleaning with reimbursement to appropriated funds.
- For Category C MWR revenue-generating activities such as bingo, amusement machine rooms, pro shops, snack bars, and unofficial travel offices located in facilities maintained with appropriated funds, compute the charge on the basis of an estimate of the utilities consumed by each Category C MWR revenue-generating activity (AFI 65-106).
- For AAFES motion picture theaters, compute the percentage of utility service to be charged by dividing the average daily time AAFES uses the theater by 24 hours.
- For Air Force Military Clothing Sales Stores not in remote and isolated locations listed in AFI 65-106, supply all utilities with reimbursement. (See paragraph 6.a.(13) of the Memorandum of Understanding between Department of the Air Force and Army and Air Force Exchange Services [AAFES] for Operation and Management of the Air Force Military Clothing Sales Stores [AFMCSS], April 24, 1987.)

- For Category C MWR activities in remote and isolated locations listed in AFI 65-106, supply all utilities without reimbursement. Also supply all fuels used for heating real property without reimbursement. However, supply all fuels (including gas, oil, coal, and other fuels) used to generate revenue from activities such as cooking and laundry/dry cleaning with reimbursement.

3.5.1.2. Medical Support Facilities Account. Compute the sales rates according to paragraph 3.8.4 without including military labor costs, capitalized charges, and administrative overhead, and provide the purchaser with AF Form 3555. Do not use a utility sales agreement to sell utilities and related services to this account. Charge this account for purchased utilities, base-produced utilities, and all fuels (including gas, coal, and other fuels) used for heating and cooking.

3.5.1.3. Military Family Housing Account. Compute the utilities sales rates using only the basic cost according to paragraph 3.8.4 without including military labor costs, capitalized charges, and administrative overhead. Distribution line losses, system operation and maintenance costs, and other utility costs should be included for the government owned distribution system outside the Military Family Housing area that is used to provide the utility to the housing units. Do not use a utility sales agreement to sell utilities and related services to this account. Charge this account for purchased utilities, base-produced utilities, and all fuels (including gas, coal, and other fuels) used for heating and cooking.

3.5.1.4. Defense Base Operating Fund (DBOF) Activities.

- Compute the sales rates according to paragraph 3.8.1 (DoD Instruction 4000.19, August 9, 1995, paragraphs D.6 and F.2.e) and provide the purchaser with AF Form 3554. Charge DBOF activities for all utilities including sewage and refuse collection and disposal services, and all fuels (including gas, coal, and other fuels) used for heating and cooking.
- Defense Commissary Agency (DECA) facilities are DBOF activities. Supply all utilities to all DECA facilities with reimbursement (Title 10 U.S.C., Section 2484, *Commissary Stores: Expenses*, and DoD Instruction 4000.19, paragraphs D.6 and F.2.e).
- In DECA facilities used solely for retail sales, meter or estimate utilities for all areas used to store, warehouse, and retail merchandise. If a DECA facility is used jointly for retail sales and other uses, estimate the amount of utilities consumed for other uses, such as troop storage, and deduct the estimated amount from the facility's total metered or estimated consumption to determine the consumption chargeable to retail sales.

3.5.1.5. Other DoD Agencies. Other DoD agencies include the Air National Guard and occupants of property leased by the Air Force according to Title 10 U.S.C., Section 2667, *Occupants Such as National Guard Units of Property Leased by the Department of Defense (DoD)* (for example, state governments using such property for National Guard units). Compute the sales rates according to paragraph 3.8.1 and provide real property management with AF Form 3554. Real property management attaches AF Form 3554 to DD Form 1144, Support Agreement.

3.5.2. Non-DoD Federal Agencies, Including Post Office Facilities. Compute the sales rates according to paragraph 3.8.2 and provide the real property management section with AF Form 3554. Real property management attaches AF Form 3554 to the Interagency Support Agreement.

3.5.3. Non-Federal Organizations:

3.5.3.1. Non-Federal organizations include public schools; occupants of privately owned mobile homes located on Air Force installations (AFI 32-6001); government civilian employees renting government quarters (AFI 32-9003, *Granting Temporary Use of Air Force Real Property*); and occupants of military housing projects insured by the government under Title 12, United States Code, Section 1701, *National Housing Act*, and Section 810, *Projects (Wherry Housing)*. Compute the sales rates according to paragraph 3.8.3. For public schools, provide the purchaser with AF Form 3553. For occupants of privately owned mobile homes located on Air Force installations, government civilian employees renting government quarters, and occupants of military housing projects insured by the government under Title 12 U.S.C., Sections 1701 and 810, provide the family housing management office with AF Form 3555. The family housing management office attaches AF Form 3555 to the quarters agreement or AF Form 1505, License to Occupy Mobile Home Space. The name, address, and date the person occupies or vacates the rental quarters or mobile home space is available from the family housing management office.

3.5.3.2. Credit unions (AFI 65-702), banks (AFI 65-701), Civil Air Patrol (AFI 36-5001, *Organization and Function of the Civil Air Patrol*), and other non-Federal organizations include any type 1, 2, or 3 private organization (AFI 34-123) not exempted by separate instructions, when the facility or space in the facility is used by the organization on other than an occasional basis (DoD Regulation 7000.14-R, volume 4; DoD Instruction 7230.7, *User Charges*, January 29, 1985, with Changes 1 and 2; DoD Instruction 1000.15, *Private Organizations on DoD Installations*, September 22, 1978, with Change 1; AFI 65-601, volume 1; and AFJI 32-9006, *Army and Air Force Basic Real Estate Agreements*). Most type 1 and several type 2 private organizations are exempted from reimbursing utilities by separate instructions. See AFI 35-204 to determine when Air Force museums are exempted. Compute the sales rates according to paragraph 3.8.3 and provide the purchaser with AF Form 3553.

3.5.3.3. Any person who connects equipment, devices, or appliances operated for private gain to the installation's utility system. Compute the sales rates according to paragraph 3.8.3 and provide the purchaser with AF Form 3553.

3.5.3.4. Construction or demolition contractors performing work on an installation for the Air Force or for a defense construction agency when FAR 36-514 and the fixed-price construction or demolition contract containing the Availability and Use of Utility Service Clause in FAR 52.236-14 authorize to receive utilities with reimbursement. Compute the sales rates according to paragraph 3.8.3, and provide AF Form 3555 to the Contracting Officer to attach to and make a part of the solicitation.

3.6. Metering. Budget for and prioritize the installation of utility meters for the sale of utilities and related services.

3.6.1. Credit unions, banks, public schools, and other non-Federal organizations at their expense furnish, install, operate, and maintain all facilities required to obtain service, including suitable metering and regulating equipment and service connections to the government's utility system.

3.6.2. For DoD agencies, including MWR activities and Air National Guard Units; Defense Base Operating Fund activities; non-DoD Federal agencies, including post office facilities; occupants of privately owned mobile homes located on Air Force installations; government civilian employees renting quarters owned or controlled by the Air Force; and occupants of military housing projects insured by the government under Title 12 U.S.C., Sections 1701 and 810, install meters on all:

- New facilities or renovated facilities, using applicable construction funds.
- Existing facilities at government expense when the total cost to install the meter does not exceed the estimated gross revenue for 1 year. For energy management purposes, install permanent or temporary meters at government expense, regardless of the gross revenue for 1 year, on new or existing individual buildings, structures, appliances, or equipment. For installing meters on existing facilities, the Base Civil Engineer budgets for and prioritizes installing meters using fund sources that include Operations and Maintenance; Research, Development, Test and Evaluation; Military Family Housing (P713 or P722); Medical Support facilities; and, DBOF facilities.

3.6.3. Meter family housing using a master metering system according to DoD Instruction 4165.37, *Policy for Provision of Utility and Other Services for MFH*, Military Handbook 1190, *Facility Planning and Design Guide*, chapter 13, paragraph 12; and, AFI 32-6002, *Family Housing, Planning, Programming, Design, and Construction*.

3.6.4. Make sure that meters are in good working order, calibrated, and tested according to standard commercial practices. Keep a copy of the latest meter test for each meter. Ensure the Operations Flight provides monthly meter readings, or allows purchasers to read their own meters and provide readings according to written instructions. Meter readings must include type, identification number, and location of the utility meter; multiplier and unit of measurement; prior and present month's reading and date; number of days between readings; consumption; and signature and phone number of the meter reader. Use the daily average consumption of any representative period in the event a meter fails. Keep a copy of meter readings for the last 24 months and make them available for purchaser and auditor review.

3.6.5. By 1 December of each year, make a detailed engineering estimate to determine current consumption for each facility with no meter installed. Consumption estimates should include building parking lot lighting but not street lighting. Use temporary meters to estimate utility consumption when feasible.

3.6.5.1. Estimate electricity consumption by:

- Inspecting motor nameplates.
- Determining what periods and loads the motors operate.
- Determining the amount and duration of electricity used for heating, air conditioning, lighting, and other loads.

3.6.5.2. Estimate natural gas consumption and other forms of energy used for heating and air conditioning by using the methods specified in the *American Society of Heating, Refrigerating, and Air Conditioning Engineers Handbook*. Consider the efficiency of the air conditioning equipment and the heating system for hot water. Normally, heat transfer is 75 percent efficient. Consider combustion efficiency as part of the heating energy requirements.

3.6.5.3. Use temporary meters to estimate water consumption or use:

- 75 gallons per day per person residing in a mobile home.
- 150 gallons per day per person for facilities occupied on a 24-hour-per-day basis.

- 50 gallons per day per person for administrative or industrial facilities occupied on an 8-hour-shift-per-day basis, plus any water needed for industrial or irrigation purposes (AFM 88-10/TM 5-813-1, volume 1, *Water Supply Source and General Considerations*).

3.6.5.4. Estimate domestic sewage consumption by using 70 to 90 percent of the water consumption, depending on the amount of water needed for industrial or irrigation purposes.

3.6.5.5. Estimate industrial wastewater flow for small users according to operational records, facility visits, and the observed flow during normal workload periods. Account for holiday, seasonal, and other unusual impacts in estimating the average flow for a small user.

3.6.5.6. Estimate industrial wastewater flow for depot maintenance activity by subtracting the estimated flow for all nondepot maintenance contributors from the total flow measured at the industrial wastewater treatment plant. (Depot maintenance activities normally account for 80 to 98 percent of the flow.)

Table 3.1. Sample Civil Engineer Utility Account Codes.

Type Service	Basic Cost	System Costs
Air Conditioning	28000 air conditioning and refrigeration plants (100 tons or greater capacity)	53070
Electricity	21020, 26000 and 53010 for base (Civil Engineer Cost Report) 72811 and entries for Element of Expense Investment Code 48020 (Allotment Ledger) for military family housing (see note)	53010 72271
Water	21010 and 27500 for base (Civil Engineer Cost Report) 72811 and entries for Element of Expense Investment Code 48010 (Allotment Ledger) for military family housing (see note)	53060 72271
Domestic Wastewater (Sewage)	21040 and 27000 for base (Civil Engineer Cost Report) 72811 and entries for Element of Expense Investment Code 48040 (Allotment Ledger) for military family housing (see note)	53040 72271
Industrial Wastewater	27100 for base (see note)	53050
Gas	21030, 23040 for base (Civil Engineer Cost Report) 72811 and entries for Element of Expense Investment Code 48030 (Allotment Ledger) for military family housing (see note)	53035 72271
Steam or High Temp Hot Water	21050, 22000, 22100, 23000, for base (Civil Engineer Cost Report) 72811 and entries for Element of Expense Investment Code 48050 (Allotment Ledger) for military family housing (see note)	53020 53030 72271
Refuse Collection and Disposal	42000 for base (Civil Engineer Cost Report)	51070

- Estimate average flows for all nondepot maintenance contributors, including activities required to reimburse and those not required to reimburse.
- Calculate the depot maintenance flow by subtracting the nondepot maintenance flows from the total flow measured at the industrial wastewater treatment plant.

- When enough data on total flows and depot maintenance's flows is available, calculate the average percentage of total flow attributed to depot maintenance. Use this total with monthly or quarterly total industrial wastewater treatment plant flows to determine depot maintenance's flows for billing purposes (AF Form 3556, Utility Sales Rates Computation Worksheet).

3.6.5.7. Estimate refuse collection and disposal by using a unit of measurement like the total number of pickups, tons, cubic yards, cans, or dumpsters.

3.6.5.8. Estimate electrical utility consumption for AAFES vending machines located in areas where the AAFES is not already being charged for utilities by using the consumption table in AAFES Energy Management EOP 36-1, figure 3-1, *Vending Machines Electrical Consumption*.

3.6.5.9. Estimate, by 1 December of each year, the cost of utilities and related services supplied to MWR activities without reimbursement. For each nonreimbursable MWR facility or activity, show the estimated utility consumption, the square footage, and the estimated annual cost of each utility service supplied. Give the data to MWR, who reports it to Congress in the HAF DPM(Q)7503, *Annual Report of Appropriated Fund Support to Nonappropriated Fund Activity*.

3.7. Collection Work Orders. Set up individual or collection work orders to accumulate utility costs (AFI 65-603, *Official Representation Funds - Guidance and Procedures*). Review them at the beginning of each fiscal year to make sure the correct account code is on the work order.

3.7.1. Use the actual utility operations and maintenance costs to compute utility sales rates. Get these costs from individual or collection work orders kept for purchase of each utility service and for operation and maintenance of individual utility plants and systems.

3.7.2. See the following sources for account codes:

- For base operations and maintenance account codes, see the Air Force Corporate Data Dictionary (on-line system), Air Force Data Elements, Standard Identifier CI-865.
- For Military Family Housing account code, see AFI 65-601, volume 4, *Appropriation Symbols and Budget Codes* (formerly AFR 172-1, volume 4).
- For sample civil engineer utility account codes used to compute utility sales rates, see table 3.1.

NOTES:

When no account code applies specifically to the individual plants or systems, use separate or collection work order numbers to collect maintenance costs. When collection and treatment of industrial wastewater are separate from that of domestic wastewater (sewage), set up work orders to separate capitalized, system, and treatment costs as well. These costs include:

- Military and civilian labor.
- Material (including a portion of bench stock).
- Treatment chemicals.
- Supplies and equipment.
- Work orders pertaining to plants, maintenance, and repair including in-house projects and projects by contract (including minor construction).

- Service contracts.
- In-house and contract laboratory.
- Sludge disposal.
- Architect-Engineer and consultant.
- Permit and fee.

Record all costs, including partial costs on service contracts. For service contracts, lab work, and other efforts that support both domestic and industrial wastewater operations or systems, split the costs between the utility systems involved according to the actual or estimated division of effort. Collect large expenses, such as hazardous sludge disposal and contract projects, in the total utility costs, and charge them against the correct utility (industrial or domestic wastewaters). If an employee works on both industrial wastewater and domestic wastewater systems or plants, split the time between two or possibly three collection orders. If an employee also works on water supply systems as well as on wastewater systems, split the time between two or possibly three collection orders.

3.8. Determining Utilities and Related Services Sales Rates. Use AF Form 3556 in PerFORM PRO or other computerized programs/worksheets to compute utility sales rates.

- Recalculate and update utility sales rates by 1 December of each year using prior fiscal year cost data, and at any time the purchased and/or production cost to the Air Force increases or decreases more than 10 percent.
- Provide the purchaser and Accounting and Finance with a copy of AF Form 3555 which shows the new rates and the date the new rates take effect. New rates to the purchaser take effect on 1 December each year and on the date the purchased cost to the Air Force changes.
- When the Air Force is billed on the basis of a proposed rate increase, subject to approval of a regulatory body, bill the purchaser accordingly. If the regulatory body subsequently denies or reduces the proposed rate, then apply any refund due the purchaser against future billings.

3.8.1. DoD Agencies, Including the Air National Guard. Compute the rates according to paragraph 3.8.4 below, without including administrative overhead, capitalized charges, and military labor costs (DoD Instruction 4000.19, paragraphs D.6 and F.2.e). **NOTE:** For golf courses whose grounds are maintained with nonpotable water from a government-owned water treatment facility, compute the rates according to paragraph 3.8.4, without including basic cost, administrative overhead, capitalized charges, and military labor costs.

3.8.2. Non-DoD Federal Agencies, Including Post Office Facilities. Compute the rates according to paragraph 3.8.4, without including administrative overhead and capitalized charges. Do include military labor costs.

3.8.3. Non-Federal Organizations:

3.8.3.1. For public schools, occupants of privately owned mobile homes, government civilian employees renting quarters owned or controlled by the Air Force, and occupants of military housing projects insured by the government under Title 12 U.S.C., Sections 1701 and 810, do not charge at local prevailing rates. Compute the rates according to paragraph 3.8.4, including administrative overhead, capitalized charges, and military labor costs.

3.8.3.2. For credit unions, banks, and other non-Federal organizations, charge at the local prevailing rate for similar service, but not less than the cost to the government for supplying the utility service (Title 31, United States Code, Sections 3302 and 483a, *User Charges (Custodians of Money)*), and DoD Instruction 7230.7). Compute costs to the government according to paragraph 3.8.4, including administrative overhead, capitalized charges, and military labor costs.

3.8.3.3. The local prevailing rate is the rate the purchaser would pay for a particular class of service if the purchaser could obtain the service directly from the nearest off-base utility supplier. Analyze the purchaser's service requirements to determine which local rates apply. If an applicable rate equals or exceeds the cost to the government for supplying the service, use the local supplier's rate. If two or more rates apply equally and exceed the cost to the government for supplying the service, use the lower(est) rate. Do not charge at the local prevailing rate when a Department of Energy Power Marketing Administration is one of the installation's utility suppliers or when the use of the local prevailing rate directly conflicts with a utility supplier's regulation.

3.8.3.4. The Air Force Base Conversion Agency Director (AFBCA/DR) determines the utility rates for local redevelopment authorities that further job creation and foster economic redevelopment. Utility systems on closure installations support caretaker and cleanup operations, and represent sunk costs. However, prorating the fixed costs to operate water and sewer systems and central heat plants to a limited number of purchasers requires charging rates substantially higher than local rates. For non-Federal purchasers at closure installations where Federally-owned and operated utility plants are underutilized and the AFBCA/DR determines that recoupment of full cost to the government results in exorbitant or uneconomical utility rates, the authority in DoD Instruction 7230.7, paragraphs D.2, *Costing*, and D.3, *Exclusions and Exceptions*, applies rather than paragraph 3.8.3.2 above. AFBCA/DR establishes a utility rate that recovers as much of the full cost to the Government for supplying the service as practicable and is still economical to encourage economic redevelopment. In no case will the rate be less than the local prevailing rate for available similar service. AFBCA/DR reconsiders the rate whenever there is a significant change in conditions (such as an increase in reuse) to recover as much of the full cost to the Government for supplying the service as practicable (DoD Instruction 7230.7). The utility rate will be no less than:

- the local prevailing rate for similar services, such as water and sewer; or
- where there is no local rate (as for steam), charges are based on the local cost of fuel (gas, oil, or coal) multiplied by the user's estimated monthly utility consumption, without recoupment of the full cost to the Government for supplying the service.

3.8.4. Computing Utility Sales Rates:

3.8.4.1. Basic Cost. Determine the basic unit cost:

- If you purchase and resell a service, use the average purchase price per unit of service. Divide the total annual purchased cost by the annual consumption.
- If an Air Force-owned plant generates the service, compute the unit cost of generation or production from the actual operations and maintenance cost.
- If you use a combination of Air Force produced and purchased domestic sewage disposal services, total both costs and divide by the total consumption.

- If the Air Force industrial wastewater plant is a pretreatment plant and its effluent goes to a contracted treatment plant, add the cost of the purchased domestic sewage disposal service to the cost of the Air Force pretreatment.

3.8.4.2. Distribution Line Losses or Gains. Estimate the percentage of loss in the Air Force transmission and distribution system (normally 10 percent) or gains in the Air Force collection system due to infiltration or inflow and increase the above basic cost by the loss or gain percentage.

- For wastewater services, if the user's flow is metered or estimated from its facilities, increase the basic cost by 10 percent or determine the actual infiltration and use that number to increase the basic cost.
- For industrial wastewater, if the user's flow is estimated from the metered flow through the industrial wastewater treatment plant, the meter readings already include line inflow or infiltration.

3.8.4.3. System Operations and Maintenance Cost. Determine the Air Force transmission, distribution, and collection system annual operations and maintenance costs per unit of service. System operations and maintenance costs include all routine maintenance and repair. If the repair does not add value or capacity, does not change the type of system (such as removing an overhead utility line and replacing it with an underground line), or upgrade the system (such as replacing an old distribution system with the same size but new system), consider the repair to be routine maintenance and repair, and include the repair in system operations and maintenance cost. **NOTE:** If the repair does add value or capacity or does change or upgrade the system, consider the repair to be a replacement cost, and add that cost in capitalized charges.

3.8.4.4. Other Utility Costs. Determine the cost of any utility not included in the operation and maintenance accounts required to produce the service, such as the cost of electric power used to pump water or the cost of electricity, natural gas, heating, chilled water, potable water, and other utilities required to collect, pump, treat, and dispose of wastewater including the cost of electric power used at lift stations and wastewater treatment plants. To compute other utility costs for domestic or industrial wastewater service, complete the reverse side of AF Form 3556.

3.8.4.5. Military Labor Costs. Do not include any military labor costs for sales to DoD agencies including the Air National Guard, base exchanges, MWR facilities, commissaries, and DBOF activities. Include standard military labor costs for sales to non-Federal organizations and to non-DoD Federal agencies including post office facilities. Effective 1 Oct 97, a military labor rate acceleration factor should no longer be added to the military labor rate. After 1 Oct 97, military labor charges still need to be included in resale rates where appropriate, but an acceleration factor “add-on” is not needed (On AF Form 3556, Nov 93, Utility Sales Rates Computation Worksheet, Line E, “Acceleration Factor for Mil Labor,” the entry should be zero).

3.8.4.6. Capitalized Charges. Do not include capitalized costs for sales to Federal agencies. Include capitalized costs for sales to non-Federal organizations. To compute the unit cost of capitalized charges, take 10 percent of the total capitalized costs in revised real estate records, as reflected in the Real Property Inventory by Category Code Record of the Air Force plant, transmission, distribution, and collection system that provides the service throughout the installation. Divide that amount by the total annual capacity (not output) of the plant.

- The total capitalized costs in revised real estate records are the original cost to the government to construct and install the plant, transmission, and total distribution or collection system; plus the cost of each military construction addition to the plant, transmission, distribution, or collection system; plus the cost of repair by replacement; minus the original cost of that portion removed.
- The total annual capacity is the maximum demand (in kilowatts, gallons per minute, or millions of British thermal units per hour) multiplied by the total units of time in a year (525,600 minutes or 8,760 hours). The maximum demand for all in-service produced utilities is the design capacity of the plant. For electricity, the design capacity is the total demand capacity of the prime plant minus the capacity of the single largest generator. For purchased electricity, gas, water, and sewage, the maximum demand is the contract demand specified in the contract.
- When you make large capital improvements that cause the annual overall utility sales rates to increase by more than 25 percent, phase in the increase over the required number of years so that no annual increase exceeds 25 percent.

3.8.4.7. Administrative Overhead. Do not include administrative overhead for sales to Federal agencies. Include administrative overhead for sales to non-Federal organizations. To compute this cost, take 3 percent of the total unit costs for all other charges.

3.9. Annual Review. Use AF Form 3557, Utility Sales Annual Review, by 1 December of each year, to annually record review of all utility sales agreements and rates. Keep a copy of the latest annual review and a record of the action taken to resolve any problems or recommendations resulting from the annual review. Review base telephone directory and real property records to identify all non-Federal organizations; non-DoD Federal agencies; and DoD agencies, facilities, individuals, and activities authorized to be supplied utilities and related services with reimbursement.

3.10. Records Disposition. Keep and dispose documentation created by this Air Force instruction as outlined in AFMAN 37-139, Records Disposition-Standards, table 32 (formerly AFR 4-20, volume 2, table 91-3).

WILLIAM P. HALLIN, Lt Gen, USAF
DCS/Installations & Logistics

Attachment 1

GLOSSARY OF REFERENCES, ABBREVIATIONS, ACRONYMS, AND TERMS

References

Public Laws

Title 10, U.S.C., Section 2394, *Contracts for Energy or Fuel for Military Installations*

Title 10, U.S.C., Section 2481, *Utilities and Services: Sale; Expansion And Extension Of Systems And Facilities*

Title 10, U.S.C., Section 2484, *Commissary Stores: Expenses*

Title 10, U.S.C., Section 2667, *Occupants Such as National Guard Units of Property Leased by the Department of Defense*

Leases: Non-Excess Property)

Title 10, U.S.C., Section 2809, *Test of Long Term Facilities Contracts*

Title 10, U.S.C., Section 2812, *Lease-Purchase of Facilities*

Title 10, U.S.C., Section 2857, *Use of Renewable Forms of Energy in New Facilities*

Title 12, U.S.C., Section 1701, *National Housing Act, Section 810, Projects (Wherry Housing)*

Title 26, U.S.C., Section 118, *Tax Reform Act of 1986 on Contributions in Aid of Construction*

Title 31, U.S.C., Section 1501, *Appropriation Accounting (Documentary Evidence Requirement for Government*

Obligations)

Title 31, U.S.C., Section 1535, *Economy Act of 1932*

Title 31, U.S.C., Section 3302, Section 483a, *User Charges (Custodians of Money)*

DoD Directives, Regulations and Instructions

DoD 7000.14-R, *DoD Financial Management Regulation, Volume 3, Budget Execution--Availability and Use of*

Budgetary Resources (to be issued; formerly AFRs 170-8 and 170-13)

DoD 7000.14-R, *DoD Financial Management Regulation, Volume 4, Accounting Policy and Procedures* (to be

issued; formerly AFRs 177-8 and 177-101, chapter 30)

DoD 7000.14-R, *DoD Financial Management Regulation, Volume 10, Contract Payment Policy and Procedures*

(to be issued; formerly AFR 177-102)

DoD Instruction 1000.15, *Private Organizations on DoD Installations*, September 22, 1978, with Change 1

DoD Instruction 4000.19, *Interservice and Intragovernmental Support*, August 9, 1995

DoD Instruction 4165.37, *Policy for Provision of Utility and Other Services for Military Family Housing*
DoD Instruction 7230.7, *User Charges*, January 29, 1985, with First Amendment (Change 1,
Military Handbook 1190, *Facility Planning and Design Guide*, Chapter 13, *Family Housing Facilities Criteria*

Miscellaneous

FAR, Part 17.103-1 (f), *Funding/Payment of Cancellation Charges*

FAR, Part 36, *Construction and Architect-Engineer Contracts*

FAR 36-514, *Availability and Use of Utility Services*

FAR 37-107, *Service Contract Act of 1965*

FAR , Part 41, *Acquisition of Utility Services*

DoD FAR Supplement, Part 241, *Acquisition of Utilities Services*

Comptroller General Decisions B-194912 and B-195507, October 4, 1979

Memorandum of Understanding Between Department of the Air Force and Army and Air Force Exchange Service (AAFES)

for Operation and Management of the Air Force Military Clothing Sales Stores (AFMCSS), April 24, 1987

Departmental Publications

AFPD 23-3, *Energy Management*

AFI 32-1021, *Planning and Programming of Facility Construction Projects*

AFI 32-1063, *Electric Power Systems*

AFI 32-1067, *Water Systems*

AFI 32-1069, *Gas Supply and Distribution*

AFI 32-6001, *Family Housing Management*

AFI 32-6002, *Family Housing Planning, Programming, Design, and Construction*

AFI 32-9003, *Granting Temporary Use of Air Force Real Property*

AFJI 32-9006, *Army and Air Force Basic Real Estate Agreements*

AFI 33-111, *Telephone Systems Management*

AFI 34-123, *Private Organizations Program*

AFI 35-204, *Art Program*

AFI 36-2306, *The Education Service Program*

AFI 36-3105, *Red Cross Activities Within the Air Force*

AFI 36-3109, *Air Force Aid Society*

AFI 36-5001, *Organization and Function of the Civil Air Patrol*

AFI 36-701, *Labor-Management Relations*

AFI 51-301, *Civil Litigation*

AFI 64-101, *Cable Television Systems on Air Force Bases*

AFI 65-106, *Appropriated Fund Support of Morale, Welfare, and Recreation and Nonappropriated Fund Instrumentalities*

AFI 65-501, *Economic Analysis*

AFI 65-601, Volume 1, *Budget Guidance and Procedures*

AFI 65-601 Volume 4, *Appropriation Symbols and Budget Codes* (formerly AFR 172-1, Volume 4)

AFI 65-603, *Official Representation Funds - Guidance and Procedures*

AFI 65-701, *Banking Services on Air Force Bases*

AFI 65-702, *Credit Unions on Air Force Installations*

AFR 91-8/TM 5-634, *Solid Waste Management*

AFJMAN 32-1080, *Electrical Power Supply and Distribution*

AFMAN 37-139, *Records Disposition--Standards*, Table 32 (formerly AFR 4-20, Volume 2, Table 91-3)

AFM 88-10/TM 5-813-1, Volume 1, *Water Supply Sources and General Considerations*

Air Force Corporate Data Dictionary (on-line system), Air Force Data Elements, *Standard Identifier CI-865*

(formerly AFR 700-20, Volume I, ADE CI-865)

AAFES Energy Management EOP 36-1, Figure 3-1, "Vending Machine Electrical Consumption"

Abbreviations and Acronyms

AFI—Air Force Instruction

AFLSA/ULT—Air Force Legal Service Agency, Utility Litigation Team

AFPD—Air Force Policy Directive

Btu—British thermal unit

DoD—Department of Defense

DLA/DFSC-A—Defense Logistics Agency, Defense Fuels Supply Center, Alternative Fuels

FAR—Federal Acquisition Regulation

HQ AFCESA/CESE—Headquarters Air Force Civil Engineer Support Agency, Electrical Engineering Division

kgal—thousand gallons

kW—kilowatt

kWh—Kilowatt hour

Mcf—thousand cubic feet

U.S.C.—United States Code

Terms

Sale of Utilities and Related Services—A transaction by which the Air Force receives reimbursement from DoD agencies, non-DoD Federal agencies, and non-Federal organizations for furnishing a utility or related service. Other related services include refuse collection and disposal service, and fuels (including oil, coal, and other fuels) used for heating real property and for generating revenue from activities such as, cooking, laundry, and dry cleaning.

Utilities—Air Force-generated, produced, or purchased:

- Electricity.
- Natural or manufactured gas.
- Potable and nonpotable (gray) water.
- Domestic (sewage) and industrial wastewater.
- Chilled water.
- Steam, hot water, or high temperature hot water services.

NOTE: Refuse collection and disposal and snow removal are purchased using utility service contracts (FAR, Part 41) only when the acquisition is not subject to the Service Contract Act of 1965 (FAR 37-107 and AFR 91-8/TM 5-634). Cable television and telephone communication services are not utility services (AFI 64-101, Cable Television Systems on Air Force Bases and AFI 33-111, Telephone Systems Management).

Attachment 2

CONTENTS OF UTILITY MANAGEMENT BROCHURES

Each brochure contains:

- The installation's customer account number or numbers.
- A list of other Federal agencies buying utilities from the supplier.
- A list of large industrial or commercial customers in the same rate class as the installation, buying utilities from the supplier.
- The supplier's curtailment plan.
- The supplier's financial and operating annual report for each of the past 5 years, if available.
- A copy of each contract, including all contract modifications.
- A copy of the current bylaws, if the supplier is a cooperative.
- A map showing the point of delivery to the installation.
- The methods of computing penalties, benefits, deductions, fuel cost adjustments, and standby charges under the current rate schedule.
- A copy of all applicable published rate schedules of the supplier.
- An analysis of the latest proposed rates and charges to the installation, including the date, amount, and percent requested for total company revenue and the amount and percent of potential annual impact on the installation.
- The amount and percent of proposed change in demand, consumption portion of the rate, or both.
- Any correspondence and news media articles on the proposed rate change.
- A copy of latest meter test for each meter.
- A copy of meter readings and billings for the last 24 months.
- An annual summary chart or graph showing each month's meter readings (energy consumption, demand) and other billing data (power factor, load factor, minimum charges). Keep a chart or graph for each of the past years.
- The latest annual utility contract review and a record of the action taken to resolve any problems or recommendations resulting from the annual review.
- Date, duration, impact on the mission, and amount of financial loss encountered if any, for each outage or out-of-service period for each of the past years.
- Drops in voltage, quantity, and pressure during peak loads.
- Pressure, quantity, and voltage being furnished.
- Pressure, quantity, and voltage guaranteed by the contract.

Attachment 3

POTABLE WATER SERVICE SPECIFICATIONS FORMAT

Use as section C in utility service contracts. Use a separate specification sheet (A-1, A-2, A-3) for each point of delivery.

Section C - Description/Specifications/Work Statement

POTABLE WATER SERVICE SPECIFICATIONS _____, dated _____.

(a) SPECIFIC PREMISES TO BE SERVED: _____.

(b) ESTIMATED SERVICE:

Estimated daily maximum demand: _____ KGAL. (K = 1,000)

Estimated annual consumption: _____ KGAL. (The government is neither obligated to use, nor is it restricted to, the above estimate.)

(c) POINT OF DELIVERY. The point of delivery of water is _____
_____ (see attached map or one-line diagram).

(d) DESCRIPTION OF WATER SERVICE. The contractor shall have _____ gallons per minute of water continuously available at the point of delivery at a pressure of not less than _____ pounds per square inch gauge.

(e) QUALITY OF WATER. The contractor shall supply clear, potable water safe for human consumption in accordance with current Federal, state, and local standards.

(f) METERING. Water shall be measured by _____ meter(s).

(g) SIZE OF CONTRACTOR'S PIPELINE TO POINT OF DELIVERY _____ inches diameter.

(h) ALTERATIONS AND ADDITIONS.

(Show the rate schedule which applies to this specification sheet.)

Attachment 4

SEWAGE SERVICE SPECIFICATIONS FORMAT

Use as section C in utility service contracts. Use a separate specification sheet (A-1, A-2, A-3) for each point of delivery.

Section C - Description/Specifications/Work Statement

SEWAGE SERVICE SPECIFICATIONS _____, dated _____.

(a) SPECIFIC PREMISES TO BE SERVED: _____.

(b) ESTIMATED SERVICE:

Estimated annual volume: _____ KGAL. (K = 1,000) (The government is neither obligated to use, nor is it restricted to, the above estimate.)

(c) POINT OF DELIVERY. The government shall deliver the sewage to the contractor at _____ (see attached map or one-line diagram).

(d) SERVICE TO BE RENDERED. The contractor shall furnish a sanitary sewer connection and sanitary sewage service that shall receive, carry, treat, and dispose of all sanitary sewage originating at the government site. The contractor shall operate the sewage disposal and treatment facilities in conformity with applicable laws, rules, and regulations promulgated by Federal, state, and local authorities.

(e) METERING. (Use the applicable provision.)

The quantity of sewage received by the contractor will be taken as ____ percent of the metered quantity of water used by the government. (70 percent to 90 percent, depending on amount of water used for industrial or irrigation purposes).

The sewage received by the contractor shall be measured by _____ flow meter(s).

(f) SIZE OF SEWER TO POINT OF DELIVERY _____ inches diameter.

(g) ALTERATIONS AND ADDITIONS.

(Show the rate schedule which applies to this specification sheet.)

Attachment 5

STEAM SERVICE SPECIFICATIONS FORMAT

Use as section C in utility service contracts. Use a separate specification sheet (A-1, A-2, A-3) for each point of delivery.

Section C - Description/Specifications/Work Statement

STEAM SERVICE SPECIFICATIONS _____, dated _____.

(a) SPECIFIC PREMISES TO BE SERVED: _____.

(b) ESTIMATED SERVICE:

Estimated hourly maximum demand: _____ pounds. (\pm 1.340 Btu per pound)

Estimated annual consumption: _____ pounds. (The government is neither obligated to use, nor is it restricted to, the above estimate.)

(c) POINT OF DELIVERY. The point of delivery of steam is _____
_____ (see attached map or one-line diagram).

(d) DESCRIPTION OF STEAM SERVICE. The contractor shall have _____ pounds per hour of steam continuously available at the point of delivery at a pressure of not less than _____ nor more than _____ pounds per square inch gauge.

(e) QUALITY OF STEAM. The steam furnished shall contain not more than 1 percent moisture and shall be free of condensate at point of delivery.

(f) CONDENSATE RETURN (make specification according to supplier's requirements).

(g) METERING. (Show number and type of meters installed [condensate or flow]).

Steam shall be measured by _____

_____ meter(s).

(h) SIZE OF PIPELINE TO POINT OF DELIVERY _____ inches diameter.

(i) ALTERATIONS AND ADDITIONS.

(Show the rate schedule which applies to this specification sheet.)

Attachment 6

ELECTRIC SERVICE SPECIFICATIONS FORMAT

Use as section C in utility service contracts. Use a separate specification sheet (A-1, A-2, A-3) for each point of delivery.

Section C - Description/Specifications/Work Statement

ELECTRIC SERVICE SPECIFICATIONS _____, dated _____.

(a) SPECIFIC PREMISES TO BE SERVED: _____.

(b) ESTIMATED SERVICE:

Estimated maximum demand: _____ kW.

Estimated annual consumption: _____ kWh. (The government is neither obligated to use, nor is it restricted to, the above estimate).

(c) POINT OF DELIVERY. The point of delivery is _____
_____ (see attached map or one-line diagram).

(d) DESCRIPTION OF ELECTRIC SERVICE. Contractor shall supply ___ phase, ___ wire, ___ hertz, alternating current at ___ volts. The voltage of contractor's high tension line is _____. The substation is owned by _____. The power factor correction capacitors on the substation are owned by _____.

Substation transformers: normal capacity _____ KVA; overload capacity is _____ KVA for _____ hours; transformer connection (Delta or Wye): high side _____; low side _____. Lightning arresters: type _____; rating _____. Switching apparatus: high side, _____, interrupting capacity _____ KVA; low side, _____, interrupting capacity _____ KVA.

(e) METERING. The contractor shall provide access to digital readout signal when available at no additional cost. The contractor shall provide daily and monthly integrated load profiles and other meter reading data if the government so requests. Service will

be measured at _____ volts by _____ watt hour meter(s) and
_____ demand meter(s)
and _____ reactive-kilovoltampere meter(s).

(f) ALTERATIONS AND ADDITIONS.

(Show the rate schedule which applies to this specification sheet.)

(NOTE: OCB = oil circuit breaker; VAB = vacuum air breaker; ACB = air circuit breaker; DISC = disconnect switch.)

Attachment 7

NATURAL GAS SERVICE SPECIFICATIONS FORMAT

Use as section C in utility service contracts. Use a separate specification sheet (A-1, A-2, A-3) for each point of delivery.

Section C - Description/Specifications/Work Statement

NATURAL GAS SPECIFICATIONS _____, dated _____.

(a) SPECIFIC PREMISES TO BE SERVED: _____.

(b) ESTIMATED SERVICE: Firm service is _____ percent of the estimated total annual consumption and interruptible service is the remaining _____ percent.

Estimated maximum demand: _____ MMBtu per hour.

Estimated maximum daily quantity: _____ MMBtu per day.

Estimated annual consumption: _____ MMBtu. (The government is neither obligated to use, nor is it restricted to, the above estimate.) Estimates, by month, of the gas consumption for a typical year are shown in attachment A of Section J.

(c) POINT OF DELIVERY. The point of delivery of gas shall be _____ (see attached map or one-line diagram).

(d) PRESSURE AT THE POINT OF DELIVERY: The contractor shall maintain regulated pressure at the point of delivery within ± 10 percent of _____ pounds per square inch gauge (psig).

(e) METERING AND BILLING. Gas shall be measured at the point of delivery by _____ meter(s). (Show number and type of meter installed.)

(f) QUALITY OF NATURAL GAS. The contractor shall provide to the government natural gas service in a manner and form that is consistent with all applicable Federal, state and local laws, rules, permits, regulations, codes (including the National Fuel Gas Code), and natural gas industry and pipeline compa-

nies standards. The gross heating value of natural gas delivered shall be no lower than ____ British thermal unit (Btu) per cubic foot (ft³). Btu is the amount of heat needed to raise the temperature of 1 pound of water by 1 degree Fahrenheit (1oF) standard atmospheric pressure. One cubic foot of gas = 1 cubic foot of natural gas at a temperature of 60oF, and a pressure of 14.73 pounds per square inch absolute (psia), and as delivered water vapor content. Gross heating value = the number of Btus produced by the combustion at constant pressure of one cubic foot of natural gas at a temperature of 60oF, a pressure of 14.73 psia, and as delivered water vapor content with air at the same temperature and pressure as the gas, when the products of combustion are cooled to the initial temperature of the gas and air, and when the water formed as product of combustion is condensed to the liquid state. The units are Btu/ft³.

ALTERATIONS AND ADDITIONS:

(Show the rate schedule which applies to the specification sheet for FIRM service.)

(Show the rate schedule which applies to the specification sheet for INTERRUPTIBLE service.)

(NOTE: Express the unit of measurement in Btu, MBtu, MMBtu, Dth, Mcf or MMcf. MM = one million. M = one thousand. 1 decatherm (Dth) = 1 MMBtu = 1,000,000 Btu.